

REMARKS

Claims 18-32 remain pending in the application. New Claims 33 and 34 have been added. Claims 18, 23 and 33 are the independent claims. None of the claims are amended herewith, however, with respect to the claims, the Examiner has indicated that Claims 24-32 would be allowable if rewritten in independent form.

As requested by the Examiner, Applicant has amended the specification to reflect the status of U.S. Patent Application Serial No. 09/532,400.

The Examiner has rejected independent Claims 18 and 23 under 35 U.S.C. 103(a) as being unpatentable over Bomhard (USP 4,426,817). The Examiner also has rejected independent Claim 23 under 35 U.S.C. 103(a) as being unpatentable over Bertram (USP 5,268,392) in view of Hume et al (USP 5,618,616). Applicant traverses each of these rejections on the grounds that the references do not teach or suggest, individually or in combination, each and every element of the limitations set forth in Applicant's respective claims.

Turning first to Claims 18 and 32 as they stand rejected under Bomhard, Bomhard teaches a storage tank having an outer concrete wall 4 which is lined with a metal liner 11 over which is applied a thermal insulation layer 12. Bomhard teaches that the metal liner 11 forms a vapor-tight layer on the inside surface of the outer [concrete] tank. Col. 2, lines 59-61. Bomhard also teaches that "a thermal insulation layer 12 is deposited on the inner surface of the liner 11 forming an insulation liner. The thermal insulation layer 12 is formed of polyurethane foam which is sprayed on in layers." Col. 2, lines 62-66. Furthermore, the vapor-tight layer is formed of metal, for instance steel, which is ductile at low temperatures. Col. 1, lines 40-42.

Several differences between Bomhard and the claimed invention are readily apparent. The "two layers" of Bomhard and the claimed invention are completely different. In the instant invention, the two layers are formed upon curing of the foam liner resulting in a distinct surface layer and barrier layer. In contrast, the "two layers" referenced in Bomhard are formed of a metal sheet and a separately applied polyurethane foam. Thus, in Bomhard, the foam does not cure, as required by the claims, to form the two layers referenced in Bomhard.

Notwithstanding the foregoing, Bomhard is clear that the sheet metal liner is applied to the inner concrete surface and then the foam insulation is sprayed over the metal liner. In contrast, applicant applies the foam liner directly to the surface of the concrete. This is desirable in the marketplace because the concrete does not need any type of additional liner or treatment (other than cleaning) that needs to be applied to the concrete before or after application of the foam.

Applicant further notes that the term “foam” is a fairly broad term in that many types of liquids when mixed with air or other gas, would have a tendency to have a consistency generally referred to as “foam.” However, in the case of the invention, it is what the foam forms into, i.e., two distinct layers, upon curing that is significant. Bomhard does not teach that the foam applied therein forms two separate layers. In fact, Bomhard teaches that in order to achieve the “two layers” as taught therein, a separate material, namely a metal liner, must be used. In particular, Bomhard suggests that two separate and distinct materials must be used to achieve the “vapor-tight layer” and the “thermal insulation layer”.

Thus, Bomhard does not teach or suggest all of the elements of either Claim 18 or 23. For this reason, the rejection of Claims 18 and 23 based on Bomhard should be withdrawn.

With respect to Claim 23 as it stands rejected under Bertram (USP 5,268,392), the Examiner has relied on Bertram as teaching all of the elements of the claims other than cleaning the concrete surface, for which the Examiner relies on Hume et al.

As with Bomhard, the clear distinction between Bertram and the claimed invention is “how” the layers are formed. In Bertram, the concrete wall 18 has a foam substratum 28 and a separately applied thermoplastic liner layer 34. Bertram teaches that thermoplastic liner layer 34 is an extruded layer that is “applied to and bonded with the interior facing surface 32 of substratum 28. Col. 5, lines 3-17. In fact, prior to application of the extruded thermoplastic layer 34, the layer is “prepared for bonding with the foam layer by applying a clear moisture-cured polyurethane primer-activator.”

Again, the “two layers” of Bertram and the claimed invention are completely different. In the invention, the two layers are formed upon curing of the foam liner to form a surface layer and a barrier layer. In this regard, only a single “foam” application need be made. In contrast, the “two layers” referenced in Bertram require two separate applications. More significantly, the inner layer is formed of a completely different material than the outer foam layer and requires a certain amount of preparation, namely extrusion and applying a clear moisture-cured polyurethane primer-activator. What is plainly evident is that the foam does not simply “cure” to form the two layers as recited by applicant’s claim. In fact, Bertram teaches that in order to achieve the “two layers” as taught therein, a separate material, namely an extruded thermoplastic, must be used. Thus, Bertram does not teach or suggest all of the elements of either Claim 18 or 23. For this reason, the rejection of Claim 23 based on Bertram should be withdrawn.

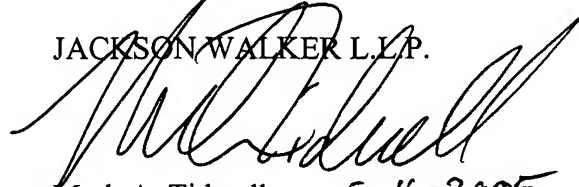
Applicant notes that two additional product claims have been added, namely Claims 33 and 34. These claims are a product that can be formed only by practicing the process that is the subject of Claims 18-32. Unlike the liner that was the subject of the previous restriction requirement, the system of Claims 33 and 34 can only be achieved by applying directly to concrete the foam that is the subject of the invention, namely a foam that when cured forms two distinct layers. For this reason, the apparatus claims are not distinct and are thus appropriate for inclusion in the foregoing application.

Based on the foregoing, the Examiner is respectfully requested to withdraw the rejections of independent Claims 18 and 23 and pass these claims to allowance. Likewise, since each independent claims are allowable, the Examiner is respectfully requested to pass all dependent claims to allowance as well.

If the Examiner feels that a telephone conference with the undersigned would be helpful to the allowance of this application, a telephone conference is respectfully requested.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'Mark A. Tidwell', is written over the firm name.

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